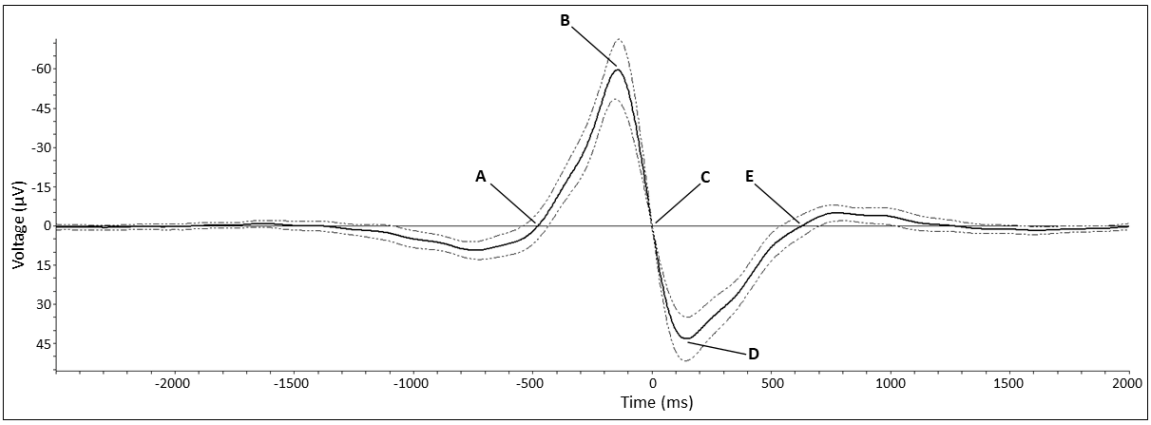
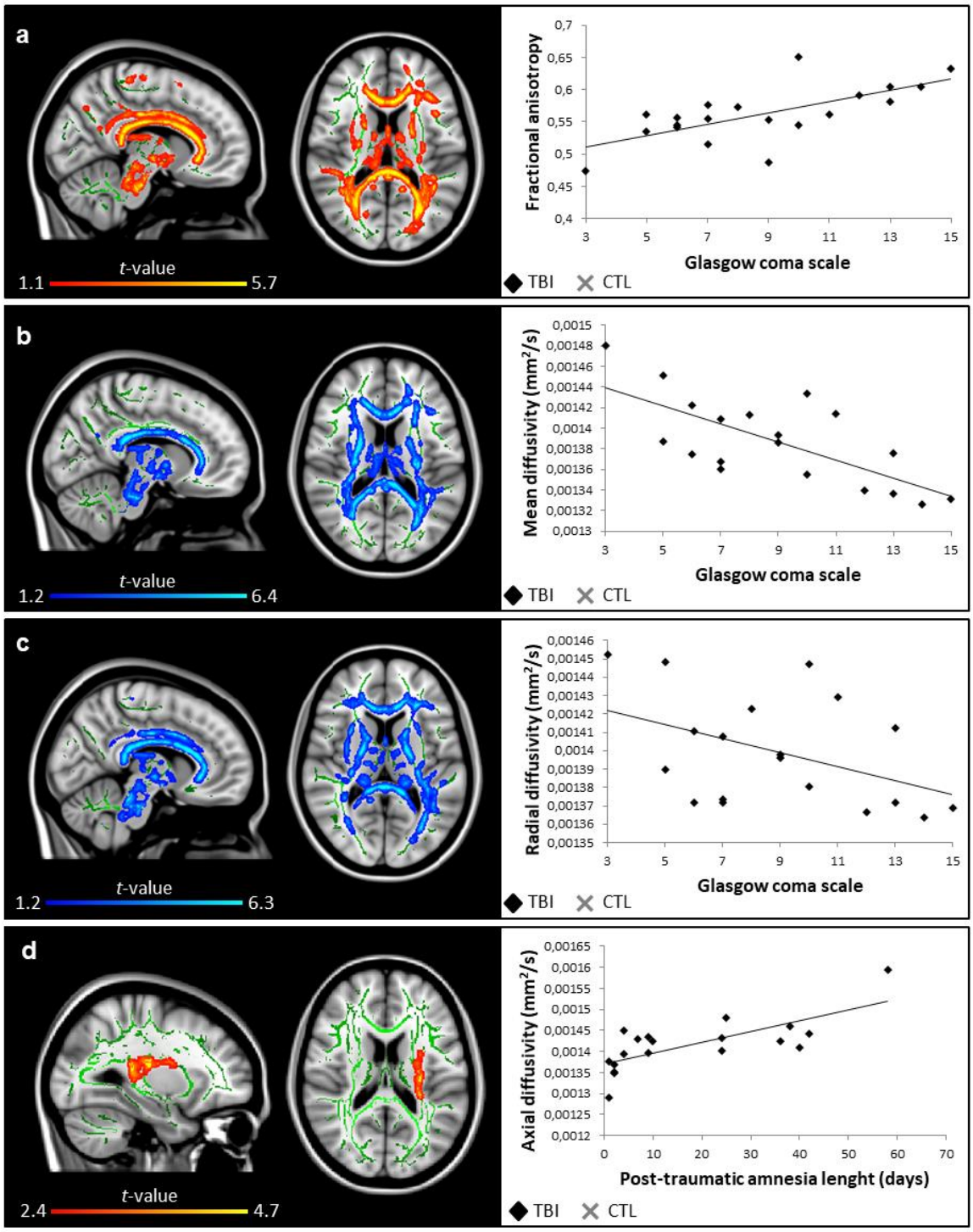
SUPPLEMENTARY TABLE I. Prescribed medication intake of participants with traumatic brain injury

Patient ID	Name of medication	Dose (mg)	Frequency of intake	Additional comments
1	Methyphenidate (Ritalin®)	20	2 / day	Ceased Ritalin 3 days before testing
	Escitalopram (Cipralex®)	20	2 / day	
	Quetiapine (Seroquel®)	25	1 / day	
	Ibuprofen (Advil®)	200	3 / day	
2	Methyphenidate (Concerta®)	27	1 / day	Ceased all 7 days before testing
	Methyphenidate (Concerta®)	18	1 / day	
3	Venlafaxine (Effexor®)	37.5	1 / day	
	Trazodone (Apo-Trazodone®)	50	2 / day	
	Methyphenidate (Concerta®)	36	2 / day	
4	Venlafaxine (Effexor®)	75	1 / day	
5	Divalproex (Epival®)	500	2 / day	
6	Methyphenidate (Concerta®)	54	1 / day	
7	Amitriptyline (Elavil®)	15	1 / day	Ceased all 3 days before testing
	Ibuprofen (Advil®)	200	1 / day	
8	Lisdexamfetamine (Vyvance®)	60	1 / day	Ceased all 4 days before testing

Participants with no medication intake are not represented in this table

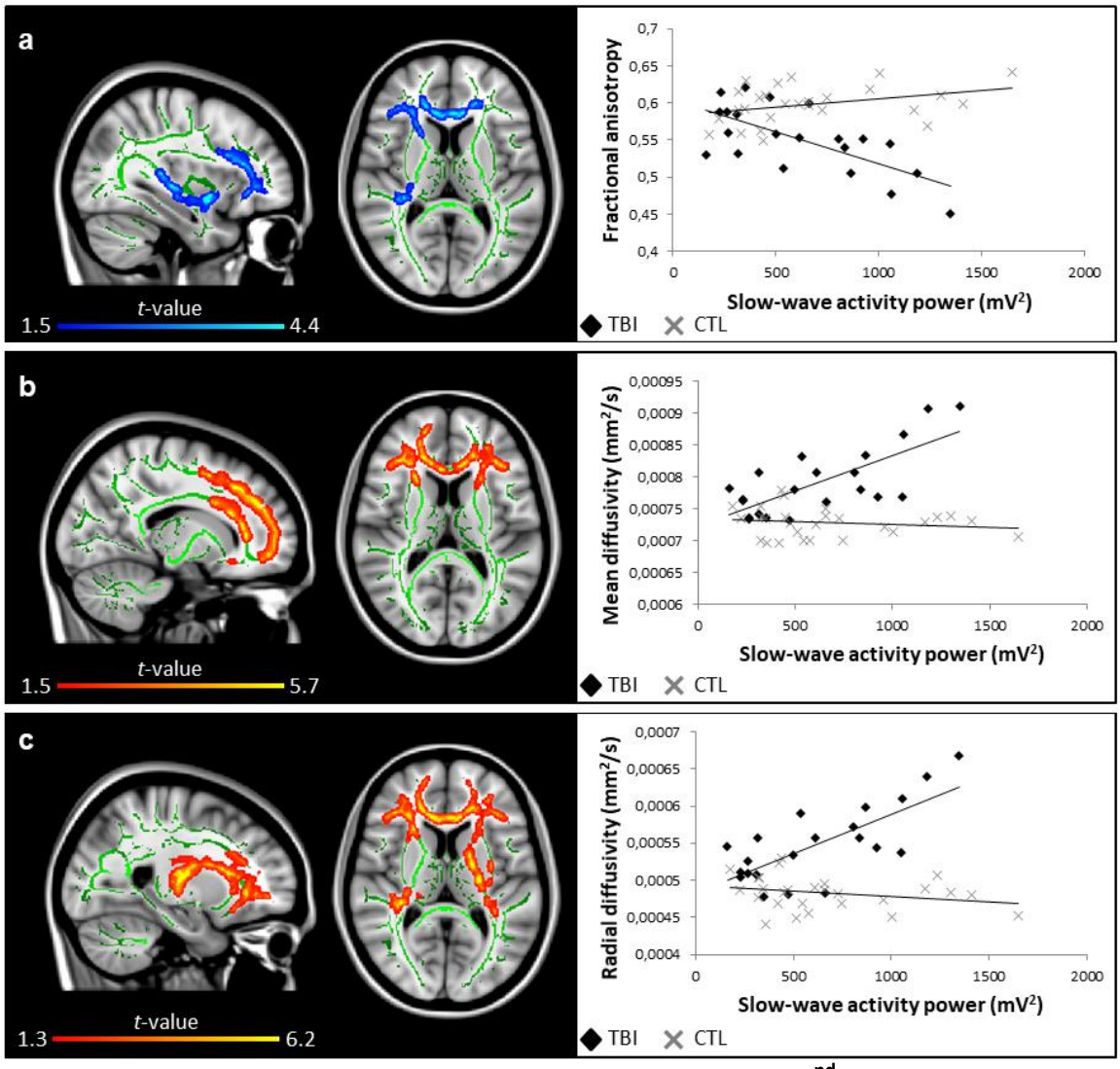


SUPPLEMENTARY FIGURE 1. Representative morphological characteristics of a slow wave. This slow wave represents the average (and standard deviation, in dotted lines) of every individual slow wave detected for all 27 healthy controls on selected frontal and central derivations (F3, F4, Fz, C3, C4, Cz). The detection occurred during the NREM N2 and N3 sleep stages for all sleep cycles of the night. The following characteristics can be seen on this figure: peak-to-peak amplitude (voltage difference from B to D), frequency (oscillation speed), negative-to-positive slope (slope from B to D), negative phase duration (time from A to C), and positive phase duration (time from C to E).

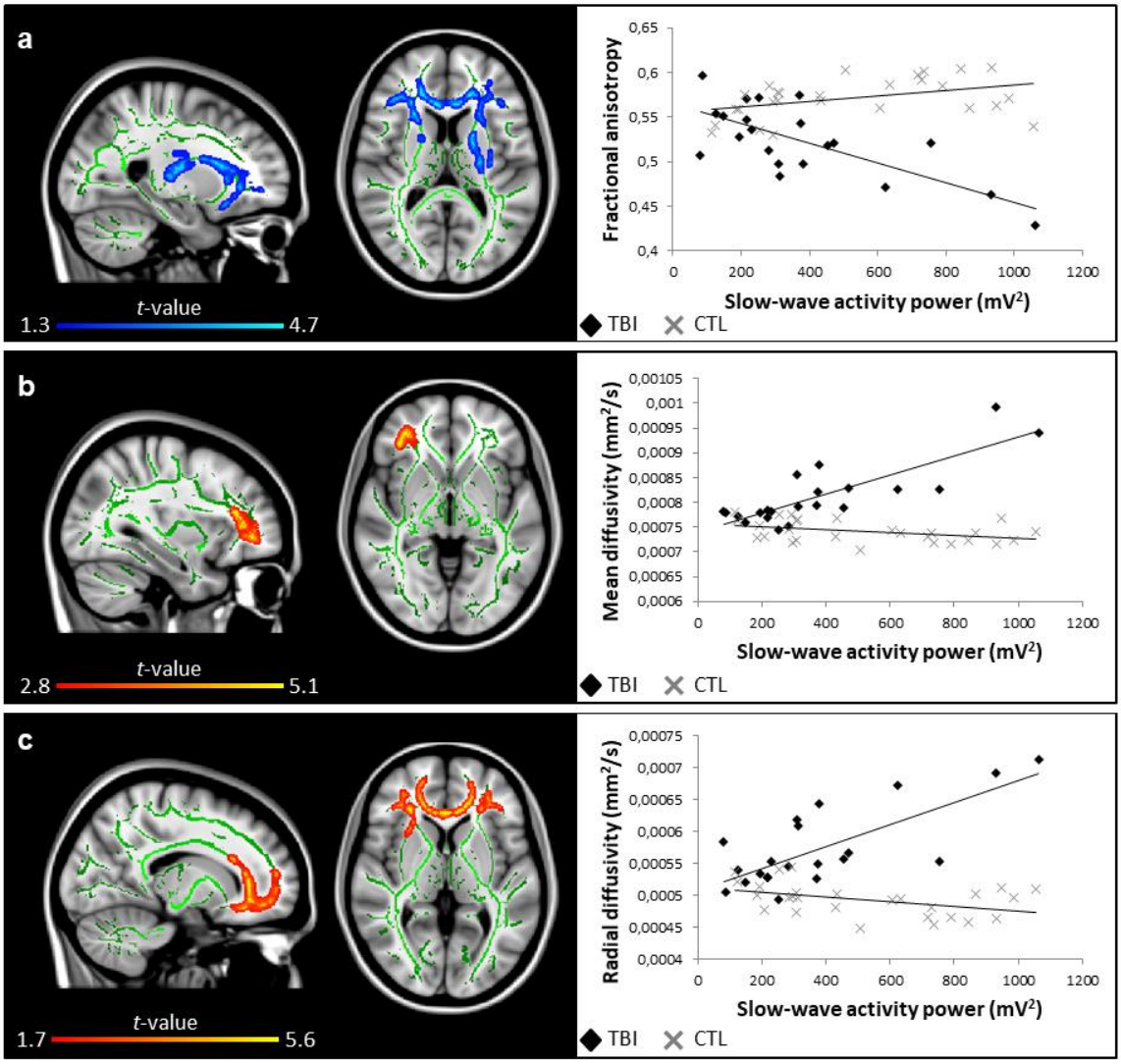


SUPPLEMENTARY FIGURE 2. Markers of traumatic brain injury severity and white matter damage. Areas in traumatic brain injury (TBI) group where markers of severity are correlated (blue, negative correlation; red to yellow, positive correlation) with **(a)** fractional anisotropy (r = 0.77), **(b)** mean diffusivity (r = -0.93), **(c)** radial diffusivity (r = -0.77), and **(d)** axial diffusivity (r = 0.83). Significant results are overlaid over the MNI152 T1 1mm brain and the mean fractional anisotropy skeleton (in green). The correlation

between the mean value of all significant clusters and markers of severity is represented on the graphs. A lower score on the Glasgow coma scale and a lengthier period of post-traumatic amnesia represent a more severe TBI. No significant correlation was found for the control group. Results are thresholded at p<0.05, adjusted for age and corrected for multiple comparisons.



SUPPLEMENTARY FIGURE 3. Slow-wave activity power in the 2nd sleep cycle and white matter damage. Areas in traumatic brain injury (TBI) group where slow wave activity power is correlated (blue, negative correlation; red to yellow, positive correlation) with **(a)** fractional anisotropy (r = -0.63), **(b)** mean diffusivity (r = 0.60), and **(c)** radial diffusivity (r = 0.62). Significant results are overlaid over the MNI152 T1 1mm brain and the mean fractional anisotropy skeleton (in green). The correlation between the mean value of all significant clusters and slow-wave activity power is represented on the graphs. No significant correlation was found for the control group. Results are thresholded at p<0.05, adjusted for age and corrected for multiple comparisons.



SUPPLEMENTARY FIGURE 4. Slow-wave activity power in the 3rd sleep cycle and white matter damage. Areas in traumatic brain injury (TBI) group where slow wave activity power is correlated (blue, negative correlation; red to yellow, positive correlation) with **(a)** fractional anisotropy (r = -0.69), **(b)** mean diffusivity (r = 0.80), and **(c)** radial diffusivity (r = 0.70). Significant results are overlaid over the MNI152 T1 1mm brain and the mean fractional anisotropy skeleton (in green). The correlation between the mean value of all significant clusters and slow-wave activity power is represented on the graphs. No significant correlation was found for the control group. Results are thresholded at p<0.05, adjusted for age and corrected for multiple comparisons.